



PROCEEDINGS
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SIX NEW SPECIES OF ADELOTHRIPS FROM THE
NEW WORLD WITH CRITICAL REMARKS ON THIS
GENUS AND RELATED GENERA
(THYSANOPTERA: TUBULIFERA)

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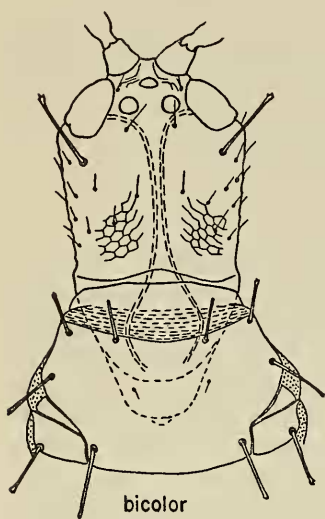
In 1938 Hood proposed the genus *Adelothrips* for the Floridian species *xanthopus*. According to him, *Adelothrips* is "allied to *Polyphemothrips* Schmutz, and . . . will probably embrace about two neotropical and two nearctic forms now known in the literature." In 1952, in a footnote, Hood revealed the names of the two nearctic forms he believed should be included, and at various times Hood and occasionally others added new species to both genera. Up to the present, however, no one has given the chief characteristics that would permit the separation of *Adelothrips* from *Polyphemothrips*, and as a result species have been assigned to either category with some vagary.

During the past few years it has been my good fortune to see or collect the type species of these genera, to examine a number of the previously included or new species, and to study type species of closely related genera. From these studies I learned that *Adelothrips* possibly can be distinguished from *Polyphemothrips* on the basis of the position of the fore ocellus; that *Adelothrips* can be distinguished from *Hoplothrips* on the basis of the width of the maxillary stylets and that, accordingly, *Hoplothrips ambitus* Hinds should be transferred to *Adelothrips*; that the European *Abiastothrips schaubergeri* (Priesner) is possibly a true *Adelothrips*; that *Tropothrips* is a synonym of *Docessis-sophothrips*; and that the six species described herein are apparently new.

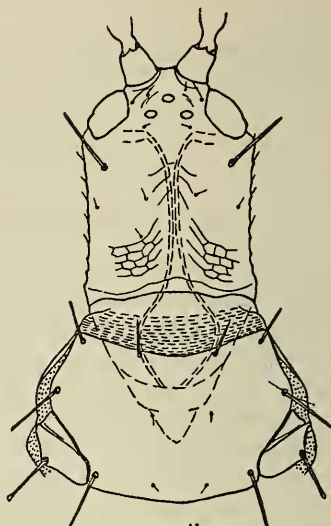
The following elucidations of these conclusions will, I hope, help make *Adelothrips* more understandable.

I am obliged to Dr. Floyd Andre, Dean and Director of the Division of Agriculture, Iowa State College, for premission to study a specimen of what is almost certainly *Polyphemothrips braziliensis* Schmutz; to Miss Kellie O'Neill for the loan of specimens, information, and use of the collections in the U. S. National Museum; to the John Simon Guggenheim Memorial Foundation for a grant-in-aid which enabled me to

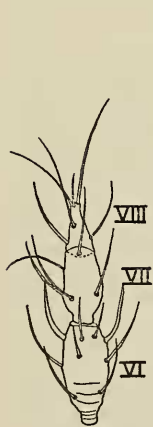
visit European and African museums; to Dr. J. P. Doncaster of the British Museum (Natural History) for making the type of *Docessis-sophothrips ampliceps* available and for his hospitality; and to Professor Dr. H. Priesner of Cairo for his advice, hospitality, and for giving me free access to his magnificent collection of Thysanoptera.



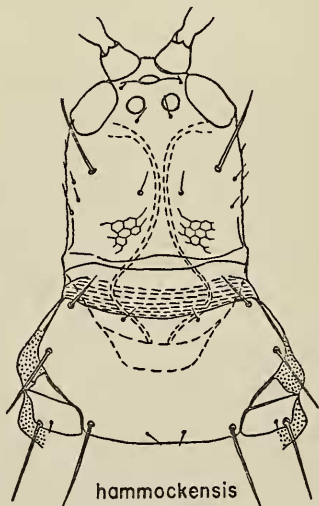
bicolor
1.



grandis
2.



ambitus
3.



hammockensis
4.



hammockensis
5.

Adelothrips Hood

Adelothrips Hood, 1938, p. 380. Type species by original designation:

Adelothrips xanthopus Hood.

Characteristics: 1.) Each antenna is usually seven-segmented, when sometimes eight-segmented the last two antennal segments (morphological segments VII and VIII) are extremely closely joined, fig. 3. In a few species these two segments are completely fused except for a ventral spot; in others a thin suture completely separates the two segments, fig. 3; in most, however, a partial ventral suture exists, indicating the division of these segments. 2.) In many species, the antennal sense cones are long and slender. 3.) Usually the posterior dorsal region of the head is swollen, being highest on the meson. Consequently the patterns of reticulation when present are upturned toward the meson, figs. 1, 2, and 4. 4.) Cheek pouches are usually completely absent but occasionally the cheeks are slightly swollen behind the eyes. 5.) The fore ocellus never overhangs the bases of the antennae. 6.) The mouth cone is broadly rounded to pointed, and the attached maxillary palps are usually large. 7.) Each maxillary stylet extends well into the head and is somewhat thickened, more so than as in *Hoplothrips* but not so thick as in *Elaphrothrips*. These stylets are not doubly looped as in *Docessis-sophothrips*. 8.) Fore wings when completely formed are not indented in the middle and they always bear accessory fringe setae. 9.) Praepectal plates are never present. 10.) Individuals of both sexes bear a prominent tooth on each fore tarsus.

The moderately thickened form of the maxillary stylets is the most distinctive characteristic of *Adelothrips* and the group to which it belongs. Unfortunately "moderately thick" cannot be described except by reference. Therefore, I presume that whoever would have reason to use this paper would have access to common genera of thrips and that it will suffice to say that the moderately thickened stylets found in *Adelothrips* are intermediate in thickness between the thin type found in *Hoplothrips*, *Haplothrips*, and others and between the thick type found in *Idolothrips*, *Elaphrothrips*, *Cryptothrips*, etc. Actually, once seen and compared, this characteristic is recognized with ease.

By these characterizations, *Adelothrips* should include *ambitus* (Hinds) and accordingly that species is herewith transferred from *Hoplothrips*. No species of *Hoplothrips* has moderately thickened maxillary stylets as does *ambitus* and all of the species of *Adelothrips*, *Docessis-sophothrips*, *Polyphemothrips*, and other relatives.

Abiastothrips schaubergeri (Priesner), the only species in its genus, is possibly a true congener of the species now placed in *Adelothrips*. It has moderately thick maxillary stylets; antennal segments VII and VIII are divided by a fine, incomplete suture; and most of its other features are likewise similar to those of *Adelothrips*. By way of differences, however slight they may be, *schaubergeri* has smaller maxillary palps than found in most species of *Adelothrips*, and the antennae are inserted farther apart than as in most species of *Adelothrips*. Yet in this latter condition, *schaubergeri* approaches that of *ambitus* whose antennae are inserted only slightly less farther apart. Perhaps *schaubergeri* is but an odd species of *Adelothrips* and such being the probability, the name *Adelothrips* should be superseded by *Abiastothrips*, the older name.

However, I am reluctant to reduce *Adelothrips* to synonymy at this writing. I had only one look at *Abiastothrips* and in my haste I may have missed some salient or unique diagnostic features. Mostly I hesitate to sink *Adelothrips* because it seems better to avoid changing the generic name of so many species until a firm conviction is reached that the two categories must be considered as one and the same genus. At any rate they are herewith proposed to be closely related, which is my principal contribution to the knowledge of these genera at the moment.

Adelothrips is also close to *Polyphemothrips* in relationship. In those members of *Adelothrips* known to me the fore ocellus does not overhang the bases of the antennae, as is the case in *Polyphemothrips*, and by this characteristic the two may be differentiated. Furthermore, species of *Polyphemothrips* are usually larger in size than species of *Adelothrips*, and the cheek pouches are usually more fully developed than those in species of *Adelothrips*.

By these definitions the Peruvian species *Polyphemothrips minor* Hood and perhaps others that are also unknown to me are not members of *Polyphemothrips* but rather of *Adelothrips*. I have never seen the species *minor* but from its description and illustration seemingly its fore ocellus is not overhanging. According to my contentions the lack of prominent protrusion (the non-overhanging condition) of the fore ocellus is an *Adelothrips* characteristic.

The types of the following new species are deposited in the collections of the Illinois Natural History Survey.

Adelothrips acutus new species

Female (brachypterous).—Length distended slightly less than 3 mm. General color dark brown with much red subintegumental pigment. Antennal segments I and II, the pedicel of antennal segment III, and all tarsi becoming yellowish brown. Tube yellowish orange to yellowish brown in the middle, tipped with gray.

Head longer than wide. Ocelli normal, hardly at all reduced. Post-ocular setae long and pointed at tip. Morphological antennal segments VII and VIII partially separated by an incomplete ventral suture. Antennal segment III with one inner and two outer sense cones.

Prothorax with most major setae long and slightly dilated to pointed at tips. Mid-posterior setae small. Mesopraesternum degenerate. Metathorax not reticulate. Wings reduced to small pads. Fore tarsi each with a well developed slender tooth.

Abdominal pelta triangular. Major posterior setae of abdominal tergite IX long and pointed. Tube about 0.6 times as long as head.

Female (macropterous).—Similar in size, color, and structure to brachypterous female, except for the presence of fully developed wings. Fore wings with six accessory setae.

Male (brachypterous).—Length distended about 2 mm. Color and general structure similar to female. Lateral pair of the major posterior setae on abdominal tergite IX shortened and spinelike. No abdominal glandular areas present.

Holotype.—Female; Mapleton, Illinois; June 2, 1949; (L. J. Stannard); ex: dead willow branches. **Allotype**.—Male; Anderson Lake State Park, Illinois; September 8, 1954; (Ross and Stannard); on

dead willow. **Paratypes**.—1 ♀, 3 ♂; same data as for allotype. 1 ♀; Toledo, Illinois; May 18, 1950; (Sanderson and Stannard); beating dead elm branches. 3 ♀; Siloam Springs State Park, Illinois; August 8-9, 1951; (Richards and Stannard); dead willow.

This species is closely related to *junctus*. These two differ significantly in the form of the tip of each postocular setae, and in the color of the tube. In *acutus*, the postocular setae are pointed at the tips and the middle portion of the tube is yellowish brown. By contrast, in *junctus* the tips of the postocular setae are dilated and the tube is wholly brown.

Adelothrips bicolor new species

Female (macropterous).—Length distended nearly 3 mm. Bicolored brown and yellow. Bright yellow: most of head, antennal segments I and II, fore tibiae, most of metathorax, and basal three-fourths of tube. White to light yellow: mid and hind tibiae and tarsi. Brownish yellow: basal portion of antennal segment III, anterior margin of head, fore femora, mesothorax, anterior of metathorax, anterior segments of abdomen. Brown: tip of antennal segment III and remainder of antennae, prothorax, mid and hind femora, posterior abdominal segments except tube with abdominal segments VII and VIII the darkest. Tip of tube gray. Body with much red subintegumental pigment.

Head, fig. 1, long, about 1.3 times as long as greatest width which is just behind eyes. Ocelli present, not overhanging. Postocular setae long, dilated at tip. Dorsal reticulations upturned on posterior meson. Morphological antennal segments VII and VIII fused except for a small incomplete suture on the venter. Antennal segment III with one inner and two outer sense cones. Mouth cone broadly rounded. Maxillary stylets not doubly looped.

Prothorax with major setae well developed and dilated at tips except for the mid-posterior pair which is seemingly absent. Mid-lateral pair slightly larger than anterior ones. Metathorax faintly reticulate. Fore wings with about nine accessory setae. Fore tibiae each armed with a well developed tooth.

Pelta triangular. Major posterior marginal setae on abdominal tergite IX with mid pair shortened and dilated at tips and lateral pair longer and pointed at tips. Tube less than three-fourths as long as head, slender, not sharply constricted at apex.

Holotype.—Female; Finca el Real, Ocosingo Valley, Chiapas, Mexico; July 1-7, 1950; (Goodnights and Stannard); dead branches.

Although different in color, this species is like *palmarum* Hood from Brazil in that both have the middle pair of the posterior marginal setae of abdominal tergite IX dilated at the tips. By the characteristic of color, *bicolor* is closest to the Venezuelan *sporophagus* described herein, except that in *bicolor* the brown is somewhat more extensive and intensive.

Adelothrips caribbeicus new species

Female (macropterous).—Length distended nearly 3 mm. Color generally bright yellow. Antennae light yellow basally becoming dark brown at apex; segments I, II, and III yellow; segment IV yellowish brown in basal half, light brown in apical half; remaining segments dark brown. Head with a light brown streak across anterior portion.

Mesothorax light brown. Fore wings each with a pale grayish cloud in middle. Tube orange brown tipped with gray. Body with much red subintegumental pigment, heaviest in abdominal segments VII, VIII, and IX, making those segments appear orange.

Head longer than wide, about 1.2 times longer than greatest width which is just behind eyes. Ocelli present, not overhanging. Postocular setae long and dilated at tip. Morphological segments VII and VIII of antennae fused except for a small partial suture on venter, pedicel thick; antennal segment III with one inner and two outer sense cones. Mouth cone broadly rounded. Maxillary stylets long but not doubly looped.

Prothorax with major setae well developed and dilated at tips except for the mid-posterior pair which are minute and pointed at tips. Antero-lateral setae smaller than mid-laterals, subequal to anteromarginals. Mesopraesternum boat-shaped, not degenerate. Fore wings with 7-11 accessory setae. Fore tarsi each armed with a moderate sized tooth.

Pelta triangular. Lateral abdominal setae pointed or dilated at tips. Major setae of posterior margin of abdominal tergite IX long and pointed. Tube slightly over two-thirds as long as head, thickened but not ridged, sharply constricted at apex.

Holotype.—Female; Campeche, Cpe., Mexico; July 5, 1951; (L. J. Stannard); beating dead limbs. **Paratype.**—1 ♀; Key West, Florida; December 28, 1951; (Richards and Stannard); ex: dead branches.

Although similar in many respects to *xanthopus*, *caribbeicus* can be distinguished easily by the thick, heavily sclerotized, orange-brown tube which is constricted at its apex. In color and form, the tube that is characteristic of *caribbeicus* approaches that found in individuals of *hammockensis* and *macrura*; however, in these later thrips each tube is ridged and is longer than the tube borne by specimens of *caribbeicus*.

This is another species which inhabits the Yucatan peninsula and extreme southern Florida. Most likely it will soon disappear from Key West which in recent times has been almost completely stripped of its natural vegetation.

Adelothrips grandis new species

Female (brachypterous).—Length distended about 4 mm. Color almost entirely dark brown. Antennal segment I, tarsi, and base and apex of tube yellowish brown.

Head long, about 1.3 times longer than greatest width which is just behind eyes, fig. 2. Ocelli present, not overhanging. Postocular setae long and pointed at tips. Faint reticulations upturned on middle of the posterior part of the head. Morphological segments VII and VIII of the antennae completely fused; antennal segment III with one inner and two outer sense cones. Mouth cone nearly pointed, fig. 2. Maxillary stylets long but not doubly looped.

Prothorax with all major setae well developed except mid-posterior ones which are minute. All these setae which are well developed with blunt to dilated tips. Metanotum smooth, not reticulate. Each fore tarsus armed with a tooth. Wings reduced to small pads.

Pelta triangular. Major setae of posterior margin of abdominal tergite IX long and pointed. Tube slightly more than one half as long as head, slender, not sharply constricted at apex.

Holotype.—Female; San Cristobal Las Casas, Chiapas, Mexico; July 11, 1950; (Goodnights and Stannard); beating dead branches.

From the literature I would presume that this species is allied to the Peruvian *conicurea* Hood in the over-all dark color and somewhat in structure and size. The two can be easily distinguished by the presence or absence of yellow pigments and by antennal characteristics. The species *conicurea* is said to have the fore tarsi and antennal segments III and IV yellow and antennal segments VII and VIII completely separated by a suture. By contrast, *grandis* has the fore tarsi and antennal segments III and IV brown, or at most yellowish brown, and morphological segments VII and VIII of the antennae are completely fused.

Adelothrips hammockensis new species

Female (macropterous).—Length slightly distended about 3 mm. Color generally bright yellow. Antennae light yellow basally becoming dark brown at apex; segments I and II light yellow; segment III yellow in basal two-thirds, brown at apex; segments IV, V, and VI brown in apical half or more, bases brownish yellow; terminal segment brown. Mid and hind tarsi nearly white. Tube orange-brown to yellow, tipped with black. Wings pale gray. Red subintegumental pigment located in head below ocelli, in a median longitudinal line in the prothorax, in a transverse band across the entire mesothorax and the anterior part of the metathorax, in a wide band across abdominal segment II (being deepest in color intensity at the sides), in the sides of abdominal segment VII, and in several other abdominal segments as scattered dots.

Head longer than wide, about 1.2 times longer than greatest width which is just behind eyes, fig. 4. Ocelli present, not overhanging. Post-ocular setae long and pointed at tip. Faint dorsal reticulations upturned on posterior meson. Morphological antennal segments VII and VIII fused except for a small partial suture on venter, this combined segment gradually tapered at base; antennal segment III with one inner and two outer sense cones, these cones long and slender. Mouth cone broadly rounded. Maxillary stylets not doubly looped.

Prothorax with most major setae long and pointed at tips. Mid-anterior marginal setae and mid-posterior setae small. Mesopraesternum boat-shaped, not degenerate. Metathorax faintly reticulate medially. Fore wings with 15-16 accessory setae. Fore tarsi each armed with a prominent tooth.

Pelta of abdominal segment I narrow. Lateral abdominal setae long and pointed. Tube as long as or slightly longer than head, thick and heavily sclerotized, ridged at base, and sharply constricted at apex, fig. 5.

Male.—Length distended more than 2.7 mm. Color similar to female but with faint brown on mesonotum and with much more red subintegumental pigment in thorax and abdomen.

General structure similar to female except the mid-lateral, the epimeral, and the posteromarginal setae longer than in female. Lateral posteromarginal setae of abdominal tergite IX exactly like female, not shortened or spinelike. Abdominal sternite VIII without glandular areas.

Holotype.—Female; Everglades National Park, Florida; December 26, 1951; (Richards and Stannard); dead branches on Paradise Key Hammock—near Royal Palm ranger station. **Allotype.**—Male; same data as for holotype.

Point for point, this species seems to be most closely related to the Cuban *Adelothrips macura*. They differ by the size of certain prothoracic setae. According to Hood (1941), in *macrura* the anteroangular prothoracic setae are longer than the mid-laterals, and the anteromarginals are not too much smaller than the mid-laterals. By contrast, in *hammockensis* the anteromarginals are small and the mid-laterals are much longer than the anteroangulars.

Adelothrips sporophagus new species

Female (macropterous).—Length distended about 2.2 mm. Predominately yellow but also colored with brown. Most of head, all of antennal segments I to III, bases of antennal segments IV and V, fore legs, and base of tube bright yellow. Metathorax, mid and hind tibiae and tarsi, abdominal segment I, and most of abdominal segments II to VIII lighter yellow. Apex of antennal segments IV and V, rest of antennae, fore part of head around ocelli, prothorax, mid and hind femora, and abdominal segment IX brown. Mesothorax, a broad middle band in each fore wing, sides of the abdominal segments, and tip of tube light brown to gray. Red subintegumental pigment heaviest in head, prothorax, and abdominal segments II and III.

Head long, slightly more than 1.3 times longer than greatest width which is just behind eyes. Postocular setae long and dilated at tips. Ocelli present, not overhanging. Faint reticulations upturned on middle of the posterior part of head. Morphological segments VII and VIII partially fused with only an incomplete ventral suture dividing them. Antennal segment III with one inner and two outer sense cones. Mouth cone broadly rounded. Maxillary stylets long but not doubly looped.

Prothorax with all major setae well developed and dilated at tips, except for the mid-posterior ones which are seemingly absent. Mid-lateral setae just slightly longer than the anterior pairs. Metanotum smooth, not reticulate. Each fore tarsus armed with a small tooth. Fore wings with about five accessory setae.

Pelta triangular. Major setae of posterior margin of tergite IX long and pointed. Tube slightly more than one half as long as head, slender, and not sharply constricted at apex.

Abdomen of holotype filled with fungus spores.

Holotype.—Female; Turmero Edo Aragua, Venezuela; March 4, 1953; (W. H. Whitecomb); ex: "spanish moss."

This species is closely related to its neighboring congener *connaticornis* (Hood)—herein transferred from *Cryptothrips*. Since the species *connaticornis*, known from Trinidad, was so briefly described, and since no specimens are available to me, it is not possible to compare the two adequately. However, in *connaticornis* the ninth abdominal segment is presumably yellow whereas in *sporophagus* this segment is largely brown. By this color characteristic the two species may be distinguished.

Docessissophothrips Bagnall

Docessissophothrips Bagnall, 1908, p. 201. Type species by original designation.—*Docessissophothrips ampliceps* Bagnall.

Tropothrips Hood, August 1949, p. 70. Type species by original designation.—*Tropothrips borgmeieri* Hood. New synonymy.

Maxillata Faure, November 1949, p. 852. Type species by original designation.—*Maxillata priesneri* Faure. Synonymized under *Tropothrips* by Stannard (1954).

The type specimen, *ampliceps*, is glued to a card and housed at the British Museum (Natural History). Part of the head is hoary with a dead growth of fungus. Because the specimen is dry and unmounted, it is impossible to view the internal maxillary stylets. Despite the fact that the shape of these stylets are undeterminable at present, this specimen has all the other attributes of those species formerly named *Tropothrips*, and *Tropothrips* is hereby relegated to synonymy.

Another specimen that I have seen, a different and undescribed species from Guadeloupe which is in the Priesner collection, is remarkably similar to the type species, *ampliceps*. The principal difference is that the Guadeloupean specimen has a yellow tube whereas the tube in *ampliceps* is brown. The maxillary stylets in the head of the specimen from Guadeloupe are visible and they are several times looped—a feature unique to this group of thrips. This type of stylet has been illustrated by Hood (1949), by Faure (1949), and by myself (1954). I am now fully convinced that *ampliceps* is congeneric with *borgmeieri*, *nigripes*, *priesneri*, and *richardsi*, and that *ampliceps* also will be found to have the typically long, doubly looped maxillary stylets.

Explanation of Figures

- Fig. 1. *Adelothrips bicolor*, dorsal view of head and prothorax.
 Fig. 2. *Adelothrips grandis*, dorsal view of head and prothorax.
 Fig. 3. *Adelothrips ambitus*, terminal segments of right antenna.
 Fig. 4. *Adelothrips hammockensis*, dorsal view of head and prothorax.
 Fig. 5. *Adelothrips hammockensis*, tube.

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